

REMARKS/ARGUMENTS

There was an objection to claim 4 because it used the trademark Berol 509. Berol 509 was one of many surfactants listed in the specification. The claim has been amended to replace "Berol 509" with "a surfactant". The discussion of surfactants is found in the paragraph beginning on line 5 of page 4 of the specification. Berol 509 is noted at line 28 of page 4, the last line in the paragraph.

Claims 1, 5 and 8-10 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Scott "Sludge characteristics and disposal alternatives for the pulp and paper industry" in view of Mansour 5,637,192.

It appears that Mansour has been cited for drying waste fiber using a substantial portion of recovered heat from a pulping process. Example 4 has been cited. In Mansour a fluid bed or entrained bed reaction chamber is indirectly heated by pulsating combustion gases from a combustion zone. The material placed in the reaction chamber is gasified and the gas may be used to operate a gas turbine or similar system

There are two reasons why Mansour does not disclose portions of the present invention.

First, the heat supplied by Mansour is not recovered heat from a pulping process. A fuel and an oxygen-containing gas is introduced into the combustion chamber [column 6, lines 1-2; column 10, lines 37-39]. The hot gaseous stream from the combustion chamber includes some of the fuel [column 6, lines 5-6; column 10, lines 41-43]. This fuel is combusted in the resonance zone [column 6, lines 13-16; column 10, lines 50-52]. Inferior fuels can be used to feed both the reaction zone and the combustion zone thus enabling the use of lower cost fuels for operating combustion gas turbines and combined cycle gas turbine systems [column 8, lines 55-58]. The fuel can be a liquid, gas, solid or mixture thereof. Preferably a liquid fuel such as heavy fuel oil, or a gaseous fuel such as natural gas, or a synthetic gas is used; however, a solid fuel, e.g., coal, char, biomass or biomass char can also be used. [column 11, lines 61-67] Fuel and air enter the combustion chamber and an ignition source fires the mixture [column 12, lines 16-18]. Combustion of solid fuels is more likely to result in ash deposits which deteriorate valve seatings in mechanical systems [column 12, lines 38-40]. In the case of the pulse combustor, where the fire tubes are the resonance tubes of the pulse combustor, only a fraction of the fuel is combusted in the combustion chamber, particularly if low-grade solid fuels are employed ... [column 14, lines 39-43]. The fluid bed may be heated by the pulsating combustor or by electric heaters or by superheated steam when treating black liquor [column 18, lines 30-39]. [*Emphasis added*]

It can be seen that Mansour does not use recovered heat from a pulping process. Mansour uses fuel to provide heat. The fuel can be fuel oil, natural gas, synthetic gas, coal, char, biomass or biomass char.

Second, Mansour does not dry out the waste sludge in the fluid bed. Mansour gasifies the waste sludge. The end product is not a dried waste sludge. The end product is dry gas, char and tar/oil. Mansour is not attempting to make dry waste sludge, Mansour is making product gas from the sludge. There is nothing left for animal bedding. The reference must be taken as a whole. The reference as a whole does not disclose what it has been cited for.

One of ordinary skill in the art would not use the system of Mansour to dry the waste sludge of Scott et al.

According to the Office Action, Figure 1 of Scott *et al.* discloses a process in which the waste material generated by virgin fiber is sent for treatment. Figure 1 does not designate the material going into the mill to be virgin fiber. It designates it as raw material. On pages 270-271 the raw material can be recycled paper and newspaper. These are not virgin fibers. Scott does not say whether virgin fiber or recycled fiber or a blend of the two should be used.

Scott *et al.* make the statement that dried sludge could be used as bedding material for cattle and rely on three sources for this statement.

One source is Paul S. Weigand and Jay P. Unwin, *Tappi Journal*, "Alternate management of pulp and paper industry solid wastes, 77(4): 91-97 (1994). A copy of the article is attached.

Wiegand *et al.* state that sludge pellets can be used as kitty litter or animal bedding. A pellet is not an animal bedding fiber agglomeration that retains its bulk, fibrous structure or appearance. Wiegand *et al.* does not disclose the present inventions..

Another source is T. R. Aspartare *et al.*, *Methods for pulp and paper mill sludge utilization and disposal*, Environmental Protection Technology Series, Washington. Copies of the pertinent pages from this monograph are attached.

The monograph describes tests done at the Camas, Washington, Crown Zellerbach mill. Three systems are described.

The first system is shown in Figure 3 and described on pages 15 and 19 of the monograph. The sludge runs through a press which expels liquid to increase the solids content to 37-40%. The press cake is transported to a fluff, a hammer mill, which breaks up the sludge filter cake. The sludge is then dropped into the hot gas stream from the incinerator and carried up through the dryer. The dried sludge and gas are separated in a cyclone. The gas is scrubbed and discharged to the atmosphere. The dried sludge at 75-89% solids is carried to the incinerator and burned. This system uses the incinerator gases for drying the

sludge so it appears that this system is used only when the incinerator is used. The end product is not dried sludge but burned sludge.

The second system is shown in Figure 4 and described in the first two full paragraphs on page 19. In this system the sludge is pressed and fluffed only. It is not dried in the dryer. In the trials, the first system was modified by removing the flange under the fluffer and dropping the sludge onto a conveyor belt to take the sludge to a dump truck for transport to the site of use. Most of the sludge for the experimental farm and burning trials was obtained in this way. The end product is a partially dewatered but not dried sludge. It would be at 37--40% solids, the solids content from the press. The system does not use recovered heat from a pulping process to dry the sludge. It appears that this is the sludge that was used for the cattle bedding studies.

The third system is shown in Figure 5 and described in the third full paragraph on page 19. This system was used for a short time only. The sludge is pressed and fluffed as before. The fluffed pulp is dried using a gas as a fuel. This system does not use recovered heat from a pulping process to dry the sludge.

Aspirate *et al.* does not disclose the present invention.

I have been unable to locate the third source, an article by the Progress in paper recycling staff: *Progress in Paper Recycling*, "Utilization of Mill Residues (sludges)". 3(1): 64-70 (1993). It would be appreciated if the Examiner would forward a copy of this article so it can be determined whether the article is pertinent to the present application. The other two are not pertinent to the present application and since the third source is a survey it is probable that it is not pertinent either.

A *prima facie* case has not been made as to claims 1, 5 and 8-10, or new claims 12-16.

Claims 2-4 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Scott *et al.* in view of Mansour further in view of Sugarman *et al.* 2,708,418. Sugarman has been cited for the use of sodium silicate in poultry bedding.

First the combination of Sugarman *et al.* with Scott *et al.* and Mansour does not overcome the deficiencies of Scott *et al.* and Mansour noted above.

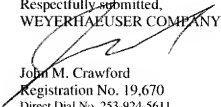
Second claim 4 is not directed to sodium silicate. It is directed to a surfactant.

A *prima facie* case has not been made as to claims 2-4 or new claims 12-14.

CONCLUSION

Reconsideration and allowance of the claims presently in the application is respectfully requested.

Respectfully submitted,
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